UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/663,564	09/15/2000	Gregory L. Slaughter	5181-47200	3521

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EXAMINER
HOANG, PHUONG N

ART UNIT	PAPER NUMBER
2194	

DATE MAILED: 11/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
	09/663,564	SLAUGHTER ET AL.
Office Action Summary	Examiner	Art Unit	
	Phuong N. Hoang	2194	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 August 2005*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 66* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *23, 42 - 43, 47 - 49, and 64* is/are allowed.

6)☒ Claim(s) *1 - 22, 24 - 41, 44 - 46, 50 - 63, and 65 - 66* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1 – 66 are pending for examination.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

3.   **Claims 1, 10, 13 – 14, 16 – 21, 24 – 26, 44 – 46, 50 – 53, 58 – 63, 65 – 66 are**

rejected under 35 U.S.C. 103(a) as being unpatentable over Object Management

Group (OMG) "Agent Technology" version 0.91 pages 1 – 66 in view of Buckle,

UK patent no. 2 332 288 A.

4.   Buckle reference was cited in the last office action.

5.   **As to claims 1**, OMG teaches a method for representing a state of a process in

a data representation language in a distributed computing environment, the method

comprising the steps of:

executing the process within a first device (executed processes where such

processes may be implemented as agents, section 2.2 and 4.3.1 on page 26);

converting (convert data representation into another one, 4.4.2 and 3.4) a current

state process (current state of the agent, section 4.3.1) into a language representation

of the current process wherein the computation state of the process (computation state,

3.3.6) comprises information about the execution state of the process within the first

device;

storing the language representation of the current computation process (store,

4.3.1);

wherein the representation language representation of the current computation

state of the process is configured for use in restored (restored, 4.3.1) the process and

resuming execution of the process (resume executing at the new host, 2.2.5).

OMG does not explicitly teach the step of reconstitution the process.

Buckle teaches reconstituting (re-constructing the byte stream back into an

object resident in remote host, page 38 lines 30 - page 39 lines 5) the process.

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the teaching of OMG and Buckle's system because the

reconstitution would enable the message to be understandable at the remote host as

they are moved.

6.　　**As to claim 10**, OMG modified Buckle modified teaches the first device

accessing the stored data representation language representation of the current

computation state of the process from the space service (OMG; store and forward,

4.3.1);

reconstituting at the first device (Buckle; re-constructing the byte stream back

into an object resident residing on a single machine, p. 15 lines 20 - 29, and page 38

lines 30 - page 39 lines 5) the process at the current computation state within the first

device from the data representation language representation of the current computation

state of the process;

ending execution of the process within the first device (Buckle; ending when

message is transferred), resuming execution of the process within the first device from

the current computation state (Buckle; continue execution at L2 residing on a single

machine, p. 15 lines 20 - 29 and p. 38 lines 10 - 20).

7.   **As to claim 13,** OMG modified by Buckle teaches the steps of wherein the

current computation state of the process includes one or more objects (OMG; objects,

3.4 and 7.11) of the process, wherein an object is an instance of a class in a computer

programming language, and wherein said converting a current computation state of the

process into a data representation language representation of the current computation

state comprises:

converting the one or more objects into data representation language

representations of the one or more objects (OMG; Java objects to xml,3.4 and 4.4.2);

wherein the data representation language representations of the one or more

objects are configured for use in generating copies of the one or more objects (Buckle;

objects can be recovered back into object resident in remote host, p. 39).

8.   **As to claim 14**, OMG teaches the step of wherein the computer programming
language is the Java programming language (Java, 3.4).

9.   **As to claims 16 and 17**, OMG teaches the step of wherein the process is
executing within a virtual machine (Java would require Java virtual machine, 3.4)
executing within the first device.

10.   **As to claim 18**, OMG teaches the step of data representation language is
extensive markup language (XML, 4.1.1).

11.   **As to claim 19**, this is the method claim of claim 1. See rejection for claim 1
above. Further, OMG teaches sending the data representation language to the second
device (mobile agents carrying xml-based messages to the new host, 4.4).

12.   **As to claims 20 and 21**, OMG teaches the steps of wherein said sending the
data representation language representation of the current computation state of the
process to a second device comprises sending the data representation language
representation in one or more messages to the second device (send messages to new
host, 3.4 and 4.1.1).

13.   **As to claims 24 and 25**, see rejection for claims 16 and 17 above.

14.   **As to claim 26**, see rejection for claim 18 above.

15.   **As to claim 44**, it is the system claim of claim 19. See rejection for claim 19 above.

16.   **As to claim 45**, see rejection for claim 20 above.

17.   **As to claim 46**, see rejection for claim 21 above.

18.   **As to claim 50**, see rejection for claim 18 above.

19.   **As to claim 51**, it is the software claim of claim 1. See rejection for claim 1 above.

20.   **As to claims 52 and 53**, see rejection for claims 2 and 3 above.

21.   **As to claim 58**, see rejection for claim 10 above.

22.   **As to claim 59**, see rejection for claim 16 above.

23.   **As to claim 60**, see rejection for claim 18 above.

24.   **As to claim 61**, it is the software claim of claim 19. See rejection for claim 19

above.

25.   **As to claims 62 and 63**, see rejection for claims 20 and 21 above.

26.   **As to claim 65**, see rejection for claim 24 above.

27.   **As to claim 66**, see rejection for claim 18 above.

28.   **Claims 2 – 9, 11, 27 - 34, 36 – 41, and 54 - 57 are rejected under 35 U.S.C.
103(a) as being unpatentable over Object Management Group (OMG) "Agent
Technology" version 0.91 pages 1 – 66, in view of Buckle, UK patent no. 2 332 288
A, and further in view of Ardissono "An Agent Architecture for Personalized Web
Stores" pages 182 – 189.**

29.   **As to claim 2**, OMG and Buckle do not explicitly teach the step of the space

service is operable to store and retrieve documents to the space for processes in the

distributed computing environment.

     Ardissono teaches the step of stores is operable to store and retrieve documents

to the space for processes in the distributed computing environment (web stores for

storing and retrieving data, title and section 2).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to apply the teaching of Ardissono to OMG and Buckle's system

because Ardissono's stores would keep the data for accessing and retrieving data for

services in the distributed system.

30.   **As to claims 3 and 4,** OMG teaches messages are in the data representation

language (messages are in XML-based, section 4.6.2).

31.   **As to claim 5,** OMG and Buckle modified by Ardissono teaches the steps of:

a second device (OMG; new host, section 4.4) accessing the stored data

representation language representation of the current computation state of the process

(Ardissono; web stores for storing and retrieving data, title and section 2);

reconstituting (Buckle; re-constructing the byte stream back into an object

resident in remote host, page 38 lines 30 - page 39 lines 5) the process at the current

computation state within the second device from the data representation language

representation of the current computation state of the process; and

resuming execution of the process within the second device from the current

computation state (OMG; resume execution at new or remote host, 2.2.5).

32.   **As to claims 6 and 7,** see rejection for claim 2 above. Further, OMG teaches

the step of one or more messages are in the data representation language (ACL

messages are implemented as XML-based, 4.1.1).

33.   **As to claim 8**, OMG teaches the steps of

generating an advertisement for the data representation language

representation, wherein the advertisement comprises information to enable access

(agent security, identity and policy to access data, 4.6) to the stored data representation

language representation, and wherein the second device accessing the stored data

representation language representation comprises:

the second device accessing the advertisement for the stored data

representation language representation; the second device locating the stored data

representation language representation using the information in the advertisement (the

remote host can access the policy to know a which groups can access the data).

34.   **As to claim 9**, this is the method claim of claim 1, 2, and 8. See rejection for

claims 1, 2, and 8 above.

35.   **As to claim 11**, Ardissono teaches the threads (threads, col. 11 lines 7 – 20 and

col. 12 lines 28 – 35).

36.   **As to claim 27**, OMG teaches the steps of:

a first device (executing the agent on the sending host, 4.1.1) operable to

execute the process); wherein the first device is configured to converting (convert data

representation into another one, 4.4.2 and 3.4) a current state process (current state of

the agent, section 4.3.1) into a language representation of the current process wherein the computation state of the process (computation state, 3.3.6) comprises information about the execution state of the process within the first device; and send the communication language messages to the remote host (mobile agents carrying xml-based messages to the new host, 4.4).

OMG does not explicitly teach the second device includes space service.

Buckle teaches the second device comprises the space service for storing the messages (the agent code is stored at location L2, pages 38 – 39).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of OMG and Buckle's system because Buckle's space service would provide the space for storing the messages for the processing and reconstituting at the destination.

OMG and Buckle do not explicitly teach that the space service for storing data used in the distributed computing environment.

Ardissono teaches the step of stores is operable to store and retrieve documents to the space for processes in the distributed computing environment (web stores for storing and retrieving data, title and section 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the teaching of Ardissono to OMG and Buckle's system because Ardissono's stores would keep the data for accessing and retrieving data for services in the distributed system.

37.   **As to claims 28 and 29**, see rejection for claims 6 and 7.

38.   **As to claims 30 - 32**, OMG teaches the distributed environment would comprise many computer devices including the third device that is able to process the same functions as the second device (section 4.6).

39.   **As to claim 33**, see rejection for claim 10 above.

40.   **As to claim 34**, see rejection for claim 11 above.

41.   **As to claims 36 - 37**, see rejection for claims 13 - 14 above respectively.

42.   **As to claims 38 and 39**, see claims 16 and 17 above.

43.   **As to claim 40**, see rejection for claim 18 above.

44.   **As to claim 41,** it is the system claims of claims 1 and 8. See rejection for claims 1 and 8 above.

45.   **As to claim 54**, see rejection for claim 5.

46.   **As to claim 55**, see rejection for claim 6 above.

47.   **As to claim 56**, see rejection for claim 8 above.

48.   **As to claim 57**, this is the medium claim of claim 9. See rejection for claim 9 above.

49.   **Claims 12 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Object Management Group (OMG) "Agent Technology" version 0.91 pages 1 – 66 in view of Buckle, UK patent no. 2 332 288 A, and further in view of Edward "Core Jini" pages 405 – 410.**

50.   Edward was cited in the last office action.

51.   **As to claim 12,** OMG and Buckle do not teach the steps of the one or more leases in the data representation language representation of the current computation state, wherein the information describing the one or more leases is configured for use in reestablishing the one or more leases to services for the process when resuming execution of the process.

Edward teaches including information describing the one or more leases (leases, pages 405 – 410), wherein the information describing the one or more leases is

configured for use in reestablishing the one or more leases to services (renewing a

lease) for the process when resuming execution of the process.

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the teaching of OMG and Edward's system because

Edward's lease would provide the length of the service for accessing the resources.

52.   **As to claim 22**, see claim 12 above.

53.   **Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over
Object Management Group (OMG) "Agent Technology" version 0.91 pages 1 – 66
in view of Buckle, UK patent no. 2 332 288 A, further in view of Ardissono "An
Agent Architecture for Personalized Web Stores" pages 182 – 189, and further in
view of Edward "Core Jini" pages 405 – 410.**

54.   Edward was cited in the last office action.

55.   **As to claim 35**, OMG, Buckle, Ardissono do not teach the steps of the one or

more leases in the data representation language representation of the current

computation state, wherein the information describing the one or more leases is

configured for use in reestablishing the one or more leases to services for the process

when resuming execution of the process.

Edward teaches including information describing the one or more leases (leases, pages 405 – 410), wherein the information describing the one or more leases is configured for use in reestablishing the one or more leases to services (renewing a lease) for the process when resuming execution of the process.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of OMG, Buckle, Ardissono, and Edward's system because Edward's lease would provide the length of the service for accessing the resources.

56.   **As to claim 35**, see rejection for claim 12 above.

Allowable Subject Matter

57.   Claims 23, 42 – 43, 47 – 49, and 64 are allowed.

Response to Arguments

58.   Applicant's arguments filed on 8/11/05 with respect to claims 1 – 22, 24 – 41, 44 – 46, 50 – 63, and 65 – 66 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

59.   The prior art of record but not relied upon request is considered to be pertinent to

applicant's disclosure.

Lo et. al, US patent no. 6,854,120, demonstrating a method of executing a

request via an Internet.

Meltzer et al, US patent no. 6,125,391, demonstrating a method of converting

Java objects to xml and vice vesa.

Pham et al, "Mobile Software Agents: An Overview", July 1998, pages 1 – 18,

demonstrating mobile Java objects.

Sivan, "Building Intelligent Market Places with Software Agents", 2000, pages 1 –

81, demonstrating mobile agent architecture.

60.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Phuong N. Hoang whose telephone number is

(571)272-3763. The examiner can normally be reached on Monday - Friday 9:00 am to

5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, William Thomson can be reached on 571-272-3718. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Ph
October 26, 2005